



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁵ :

A47L 25/00

A1

(11) International Publication Number:

WO 92/14395

(43) International Publication Date:

3 September 1992 (03.09.92)

(21) International Application Number: PCT/GB92/00309

(22) International Filing Date: 20 February 1992 (20.02.92)

(30) Priority data:

9103603.8

21 February 1991 (21.02.91) GB

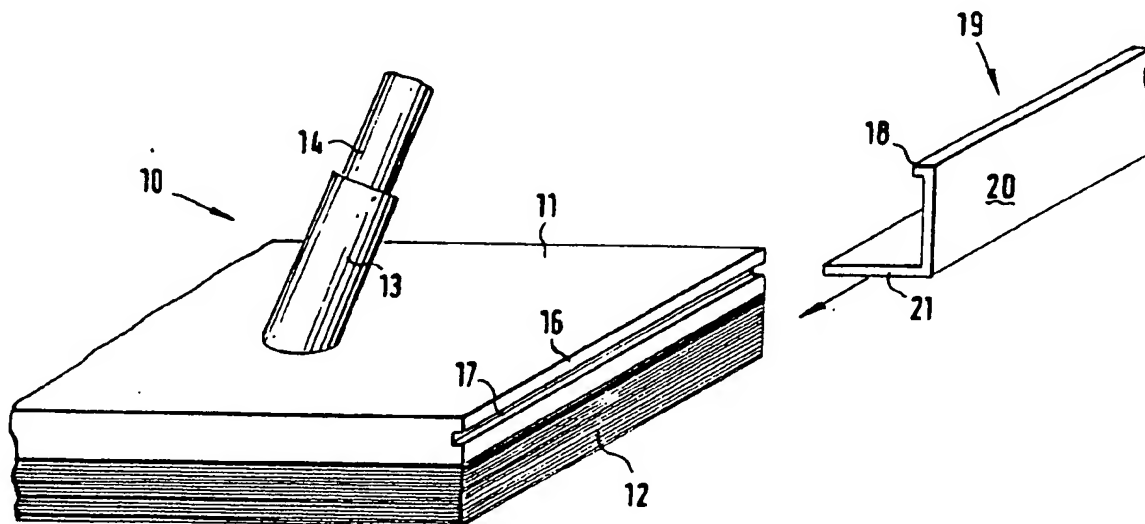
(71)(72) Applicant and Inventor: BORRELL, David, Michael
[GB/GB]; 11 Hanford Road, Aveley, Essex RM15 4SS
(GB).(74) Agent: GOLD, Tibor, Zoltán; Stephenson Harwood, One
St. Paul's Churchyard, London EC4M 8SH (GB).

(81) Designated States: AT (European patent), AU, BE (European patent), CA, CH (European patent), DE (European patent), DK (European patent), ES (European patent), FR (European patent), GB (European patent), GR (European patent), IT (European patent), JP, LU (European patent), MC (European patent), NL (European patent), SE (European patent), US.

Published

With international search report.

(54) Title: DEBRIS PICK-UP IMPLEMENT



(57) Abstract

A pick-up implement for picking up debris, usable for picking up rubbish or items for forensic examination comprises a base plate (11) to which a handle (14) is either attached or attachable, e.g. via a swivel joint (13). A pad or stack (12) of individually separable adhesive sheets are attached to the base plate (11). The end face of the pad or stack (12) remote from the handle attachment face of the base plate (11) is tackily adhesive.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	FI	Finland	MI	Mali
AU	Australia	FR	France	MN	Mongolia
BB	Barbados	GA	Gabon	MR	Mauritania
BE	Belgium	GB	United Kingdom	MW	Malawi
BF	Burkina Faso	GN	Guinea	NI	Netherlands
BG	Bulgaria	GR	Greece	NO	Norway
BJ	Benin	HU	Hungary	PL	Poland
BR	Brazil	IE	Ireland	RO	Romania
CA	Canada	IT	Italy	RU	Russian Federation
CF	Central African Republic	JP	Japan	SD	Sudan
CG	Congo	KP	Democratic People's Republic of Korea	SE	Sweden
CH	Switzerland	KR	Republic of Korea	SN	Senegal
CI	Côte d'Ivoire	LI	Liechtenstein	SU	Soviet Union
CM	Cameroon	LK	Sri Lanka	TD	Chad
CS	Czechoslovakia	LU	Luxembourg	TG	Togo
DE	Germany	MC	Monaco	US	United States of America
DK	Denmark	MG	Madagascar		
ES	Spain				

DEBRIS PICK-UP IMPLEMENTFIELD OF THE INVENTION:

This invention concerns a debris pick-up implement. More particularly, the invention relates to an implement which makes use of an adhesive surface which is to be applied to an item of refuse, debris or the like to be picked up and removed either for forensic examination or for disposal.

BACKGROUND & DESCRIPTION OF THE PRIOR ART:

Hand implements utilising the tackiness of an adhesive surface are known and commercially available. Thus a so-called lint roller is known in which a freely rotatable cylinder is carried in a U-shaped supporting bracket which extends axially parallel with, but spaced from, the axis of the cylinder. The cylinder carries a 'refillable' roll of adhesive tape. A handle is attached to the bracket. Another known device, which is essentially constructionally identical with the lint roller, is intended for rolling on the playing surface of a gramophone disc to remove dirt and 'static'. Similar devices are used in forensic investigations, e.g. at the scene of a crime.

These known implements suffer from a number of disadvantages and inconveniences. Firstly, they provide a very restricted contact area between the part of the cylindrical adhesive tape roll and the area to be cleaned. Secondly, once the contact area loses its tack through being covered by refuse/debris, the removal of this contact section and the exposure of the adjacent tacky section of the roll is messy and cumbersome: the dirty section has to be unpicked, separated and cut off, e.g. with scissors. Thirdly, if the piece of captured refuse or debris is large, the limited clearance between the roll and the bracket causes it to be knocked off the adhesive tape. Finally, such implements cannot be used conveniently for cleaning large floor areas or less accessible locations such as higher parts of walls and ceilings.

SUMMARY OF THE PRESENT INVENTION

The present invention seeks to overcome the said disadvantages and inconveniences.

According to the present invention, there is provided a debris pick-up implement comprising a base plate to which a handle is attached or attachable and which carries a stack of individual flat sheets, the face of each sheet remote from said base plate being covered with or including a tacky adhesive in such a manner that the sheets are held together in the stack but are individually readily removable from each other, the face most remote from said base plate serving as surface for contact with debris to be picked up.

Preferably, the handle is connected to the base plate by a swivel joint.

In an expedient embodiment, the handle is one of a set of handles of varying lengths each of which is readily exchangeably attached or attachable to the base plate.

It will be seen therefore that in the last-mentioned embodiment the invention provides, in effect, not merely a simple tool but rather an entire cleaning system, enabling the implement to be used by a user in a standing position to clean floors, curtains, walls, ceilings; or on clothes, desks, cupboards, drawers. Also, by suitably shaping the stack, awkward corners and edges can be reached and curved surfaces, mouldings etc., can be cleaned.

Apart from uses as a refuse pick-up means around domestic residences, cars, caravans, boats; offices; and industrial and commercial premises, the implement according to the invention has another very important application, as an implement for collecting forensic evidence where the use of stacks in pad form could be used to determine the location from which a specimen has been picked up; and also for handling, e.g. medically contaminated or toxic waste.

The words 'refuse' and 'debris' should therefore be interpreted throughout herein in the widest sense as referring to any target object to be picked up and not merely undesirable objects as would normally be implied by the words 'refuse' and 'debris'.

The nature and adhesive power of the adhesive may vary within wide limits, depending on the intended application.

The stack size and shape, and number of adhesive sheets it contains, may vary as convenient. The base plate may have a short stub tube for connection to a solid cylindrical or tubular handle, with or without the intermediation of a swivel joint, as is well-known from commercially available carpet sweepers and vacuum-cleaners.

BRIEF DESCRIPTION OF THE DRAWINGS:

The invention is described, purely by way of example, with reference to the accompanying drawings, wherein:

Figure 1 is a perspective view of a debris pick-up implement according to the invention;

Figure 2 is an enlarged side view of the implement according to Figure 1;

Figure 3 is a fragmentary perspective view of the implement according to Figures 1 and 2, on an enlarged scale, showing the manner of attaching a securing clip; and

Figure 4 is an enlarged perspective view of a stack of adhesive sheets forming part of the invention and illustrating the start of a peeling-off operation from an adhesive-free edge area of the stack.

DESCRIPTION OF THE PREFERRED EMBODIMENTS.

Referring to the drawings, there is shown a debris pick-up implement 10 destined for use by a user standing upright to pick up debris or refuse from e.g. a floor by a repeated dabbing motion. The implement 10 has a base plate 11 one face of which carries in a detachable manner (not shown in detail in Figure 1) a parallelepipedal pad or stack 12 of adhesive sheets. The opposite

face of the base plate has a pipe stub or stock 13 for receiving a handle 14.

The manner of interconnection between socket 13 and handle 14 is not shown in detail but it may be a rigid one or a detachable one; and it may or may not be associated with a swivel joint enabling the angle between the plane of the base plate 11 and the axis of the handle 14 to be varied.

As shown in Figure 2, it may be preferred for the axis of the socket 13 to make an acute angle e.g. 75° , with the plane of the base plate 11. The handle 14 has a free end section 15 which itself may be angled at e.g. 145° to the remainder of the handle 14.

The or each narrow side face 16 of the base plate 11 is formed with a groove 17 to receive a flange 18 of a cover clip 19 having a web 20 connecting the flange 18 to a longer flange 21 destined to locate below the lowermost face of the stack 12.

The stack 12 comprises a set of rectangular adhesive sheets which are individually separable (peelable-off) from the stack. For forensic use, the sheets may be transparent. If desired, release coating material or backing material, e.g. paper, acetate, vinyl, polymer, film etc., may be interleaved with the adhesive sheets. Commercially, the stack 12 is intended to be sold as a 'refill'.

The number of sheets in the stack 12 may vary. For forensic use, 5 - 10 sheets may suffice. Film-like flexible material is preferred for such use.

In use, once the lowermost adhesive sheet has been exposed and multiply used such that it is no longer effective, the sheet is simply peeled off and thrown away. No cutting is involved. To facilitate further the peeling-off procedure, and to minimise manual contact with the contaminated sheet, a marginal area 22 (Figure 4) of the stack 12 may be adhesive-free and/or may optionally be provided with a tab 23, this area being known as a fingerlift area.

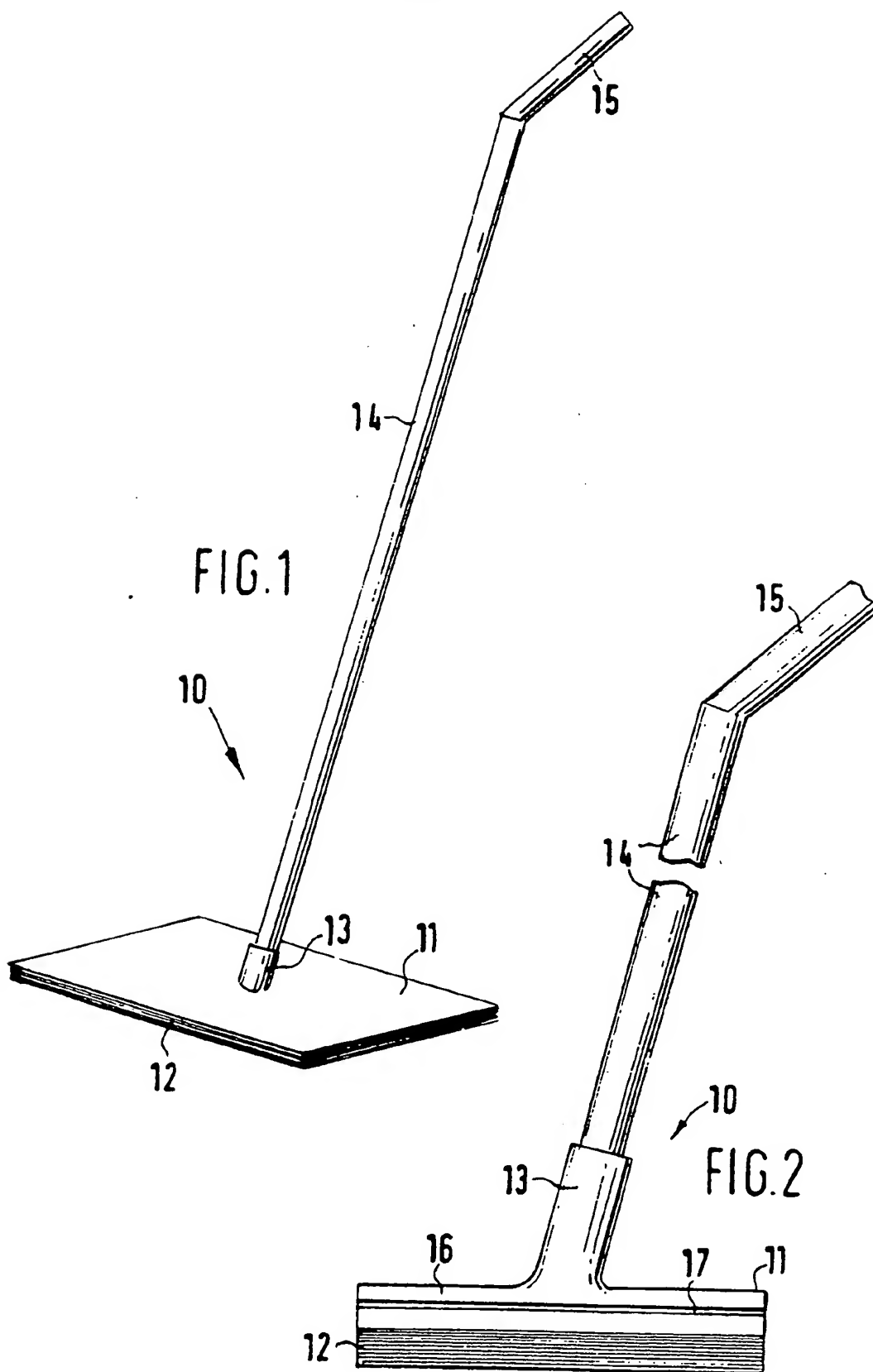
The connection between the pad/stack 12 and base plate 11 has not been shown in detail, but any convenient readily releasable securing means may be used so as easily and rapidly to replace a used-up pad 12 with a new one.

CLAIMS

1. A debris pick-up implement comprising a base plate (11) to which a handle (14) is attached or attachable characterised in that the base plate (11) carries a stack (12) of individual flat sheets, the face of each sheet remote from said base plate (11) being covered with or including a tacky adhesive in such a manner that the sheets are held together in the stack (12) but are individually readily removable from each other, the face remote from said base plate (11) serving as surface for contact with debris to be picked up.
2. An implement according to claim 1, characterised in that each said sheet has a non-adhesive coating material on its reverse side or a backing material e.g. a film or paper, a polymeric material, a vinyl, acetate, and said remote face is optionally provided with a protective covering (19) removable before using on a given occasion.
3. An implement according to claim 1 or 2, characterised in that an edge area (22) of each said sheet is adhesive-free and/or is provided with a tab (23) to facilitate its separation from the remainder of the stack (12).
4. An implement according to any preceding claim, characterised in that the stack (12) is parallelepipedal.
5. An implement according to any preceding claim, characterised in that the stack (12) is covered when not in use by means of a securing clip (19) engaging with the base plate (11) and extending over the said remote face.
6. An implement according to any preceding claim, characterised in that the handle (14) is connected to the base plate (12) by a swivel joint (13).
7. An implement according to any preceding claim, characterised in that the handle (14) is one of a set of handles of varying lengths each of which is readily exchangeably attached or attachable to the base plate (11).

8. An implement according to any preceding claim, characterised in that the attachment of the stack (12) to the base plate (11) is such as to permit a stack of given face dimensions and configuration to be replaced by another stack (12) of different face dimensions and configuration.

1/3



SUBSTITUTE SHEET

2/3

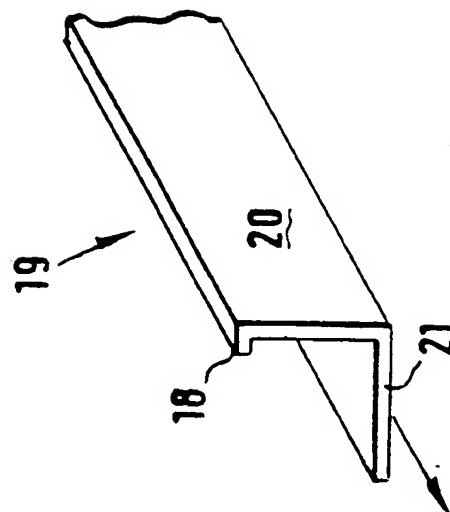
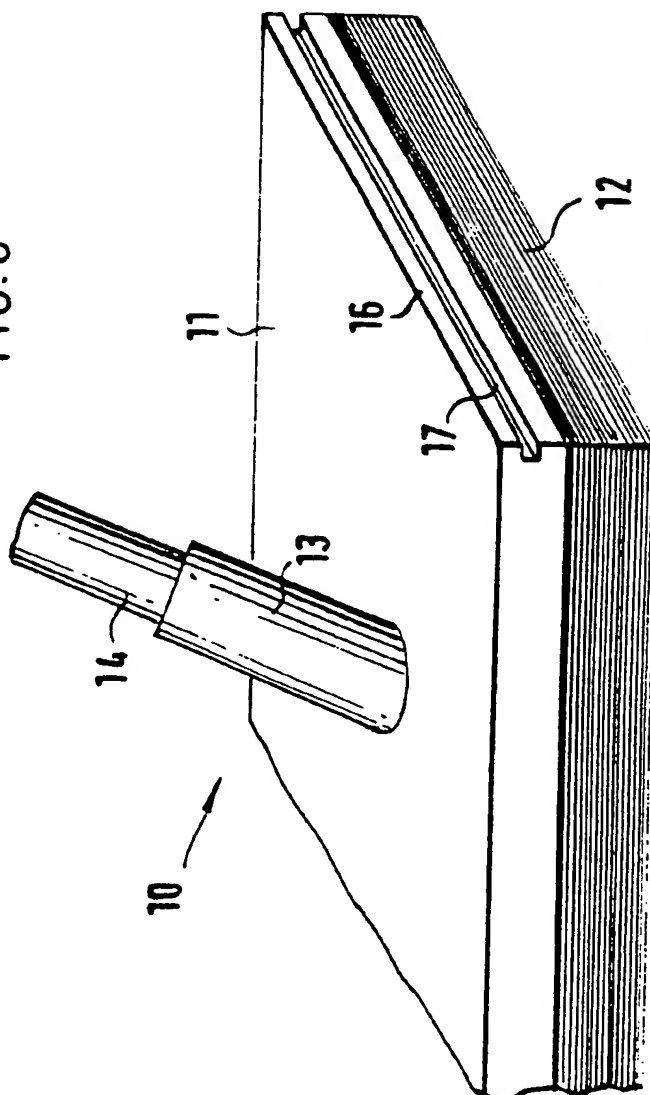


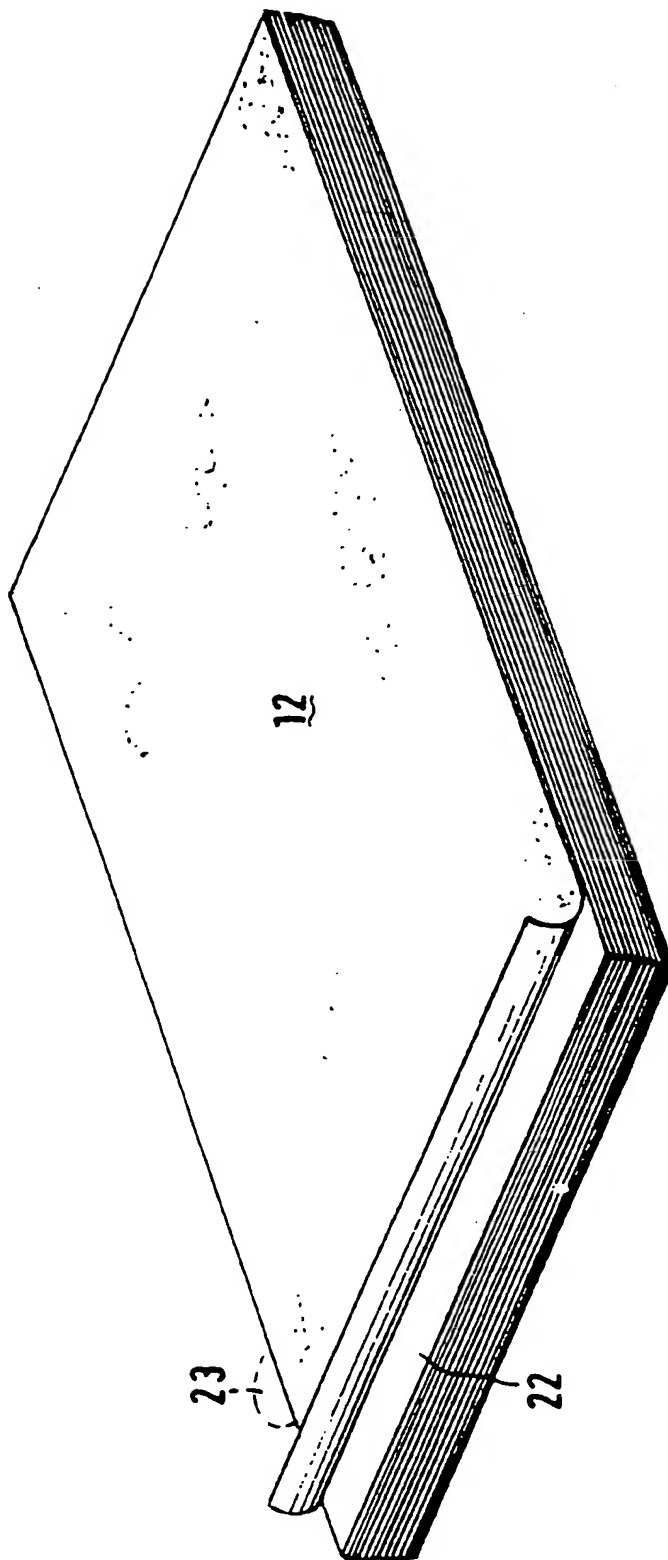
FIG. 3



SUBSTITUTE SHEET

3/3

FIG. 4

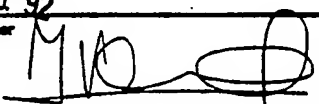


SUBSTITUTE SHEET

INTERNATIONAL SEARCH REPORT

PCT/GB 92/00309

International Application No.

I. CLASSIFICATION OF SUBJECT MATTER (If several classification symbols apply, indicate all)		
According to International Patent Classification (IPC) or to both National Classification and IPC Int.Cl. 5 A47L25/00		
II. FIELDS SEARCHED		
Minimum Documentation Searched ⁷		
Classification System	Classification Symbols	
Int.Cl. 5	A47L	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched ⁸		
III. DOCUMENTS CONSIDERED TO BE RELEVANT⁹		
Category ¹⁰	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
Y A	US,A,2 715 742 (T. M. COLES) 23 August 1950 see figures ---	1-4,8 5
Y	US,A,4 083 075 (M. A. HESTER) 11 April 1978 see column 1, line 66 - column 2, line 48; figures 1,2 ---	1-4,8
A	US,A,3 373 457 (A.J. ROUGH JR) 6 May 1965 see the whole document ---	1-4,8
A	EP,A,0 246 787 (MINNESOTA MINING & MFG CPY) 25 November 1987 see page 5, column 14 - page 10, column 22; figures ---	1-4
A	DE,U,8 700 508 (J. HONERKAMP) 21 May 1987 ---	1-4
	-/-	
<p>¹⁰ Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"A" document member of the same patent family</p>		
IV. CERTIFICATION		
Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report	
12 MAY 1992	21.05.92	
International Searching Authority	Signature of Authorized Officer	
EUROPEAN PATENT OFFICE	M. VANMOL 	

III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)		
Category*	Citation of Document, with indication, where appropriate, of the relevant passages	Relevant to Claim No.
A	US,A,4 713 274 (C. L. MINOR) 15 December 1987 see the whole document ---	1-4
A	FR,A,2 632 846 (N. D. MC KAY) 22 December 1989 ---	
A	EP,A,0 061 048 (GEBRAUCHS GERAETE GMBH) 29 September 1982 ---	

ANNEX TO THE INTERNATIONAL SEARCH REPORT
ON INTERNATIONAL PATENT APPLICATION NO. GB 9200309
SA 56844

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information. 12/05/92

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US-A-2715742		None	
US-A-4083075	11-04-78	None	
US-A-3373457		None	
EP-A-0246787	25-11-87	US-A- 4742913 JP-A- 62271871	10-05-88 26-11-87
DE-U-8700508	21-05-87	None	
US-A-4713274	15-12-87	None	
FR-A-2632846	22-12-89	US-A- 4905337 AU-A- 3660889 DE-A- 3919899 DE-U- 8910883 GB-A- 2220841 JP-A- 2071721 US-A- 5027465	06-03-90 21-12-89 28-12-89 03-05-90 24-01-90 12-03-90 02-07-91
EP-A-0061048	29-09-82	DE-C- 3111150 CA-A- 1175207 CA-C- 1194058 CH-A- 648055 FR-A, B 2501994 GB-A, B 2095128 JP-C- 1469284 JP-A- 57168976 JP-B- 63018984 US-A- 4427726 US-A- 4546011	13-01-83 02-10-84 24-09-85 28-02-85 24-09-82 29-09-82 30-11-88 18-10-82 20-04-88 24-01-84 08-10-85

EPO FORM P007

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82